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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/670,090      | 09/24/2003  | Hyun Jin Kim         | OEKM-107520         | 6266             |

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| EXAMINER |
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BUTTNER, DAVID J

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| ART UNIT | PAPER NUMBER |
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1712

DATE MAILED: 03/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|--------------------------------------|-----------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/670,090 | <b>Applicant(s)</b><br>KIM ET AL. |  |
|                              | <b>Examiner</b><br>David Buttner     | <b>Art Unit</b><br>1712           |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on amdt 4/26/04.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 17-31 and 40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-31 and 40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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The status of the parent application must be updated at the beginning of the specification.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 29-31 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims call for "nanocomposite", yet claim 17 requires "nanofiller". Is nanocomposite required in addition to nanofiller?

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 17-19 and 40 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Horiuchi '097.

Horiuchi suggests paints for golf balls that include montmorillonite (col 2 line 10). Inherently, montmorillonite it is nanosize and has a "platey" structure. The Nanocor Technical Data sheet provided by applicant and the Mini-Encyclopedia of Papermaking can be cited to show the typical size and shape of montmorillonite.

Claims 17,18,20-23,30 and 40 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP02092379.

The reference is believed to exemplify golf ball cores that include clay. Oral translation indicates the clay is used at 2-15%.

The reference is not believed to report the precise dimensions of the clay, but it is known that clays are "platey" (i.e., high L/D ratio) and can have a largest dimension within applicant's range (see Encyclopedia of Chemical Technology and Encyclopedia of Polymer Science). It appears many typical clays meet applicant's requirements. It would have been obvious if not considered anticipated to use such a clay in the reference's ball.

Claims 17,18,20-23 and 40 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kent '936.

Kent suggests elastic materials for golf ball cores (col 5 line 34). Clay can be used as a filler (col 7 line 24). The clay is somewhat coarser than 0.1 micron (col 4 line 4-7), but precise dimensions are not given.

It is known that clays are "platey" (i.e., high L/D ratio) and can have a largest dimension within applicant's range (see Encyclopedia of Chemical Technology and Encyclopedia of Polymer Science). It appears many typical clays meet applicant's requirements. It would have been obvious if not considered anticipated to use such a clay in Kent's ball.

Claims 17-19, 24-29, 31 and 40 are rejected under 35 U.S.C. 103(a) as obvious over the Sullivan '025 Patent optionally in view of the Encyclopedia of Chemical Technology or Encyclopedia of Polymer Science and Engineering.

Sullivan suggests fillers such as clay (col. 11 line 51) in the inner and outer cover layers of golf balls (col. 11 line 28). Coupling agents may be used to couple the filler to resin (col. 10 line 57).

Sullivan does not report the precise dimensions of his clay, but it is known that clays are "platey" (i.e., high L/D ratio) and can have a largest dimension within applicant's range (see Encyclopedia of Chemical Technology and Encyclopedia of Polymer Science). It appears many typical clays (treated with coupling agent) meet applicant's requirements. It would have been obvious to use such a clay in Sullivan's ball.

Claims 17-19, 24-29, 31 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Sullivan '025 Patent in view of Okada '411.

Sullivan suggests fillers such as clay (col. 11 line 51) in the inner and outer covers of golf balls (col. 11 line 28). The covers may be polyamide (col. 7 line 17).

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Sullivan does not teach applicant's preferred technique of combining the clay and polyamide into a "nanocomposite".

Okada teaches such a technique results in improved mechanical strength and toughness. Applicant apparently admits (page 7 line 14) that Okada produces the claimed nanocomposites.

It would have been obvious to use Okada's superior clay/polyamide nano composite as the clay/polyamide covers suggested by Sullivan.

Claim 40 rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over WO 99/61237.

The reference suggests blends polycarbonate with nanoparticles (page 3 line 8) such as montmorillonite (page 3 line 21). The particles are platelet shaped (page 3 line 11). Applicant's "for use in golf balls" is merely a future intended use.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Buttner whose telephone number is 571-272-1084. The examiner can normally be reached on weekdays from 10 to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DAVID J. BUTTNER  
PRIMARY EXAMINER

David Buttner



3/4/05